INDEX

Activation, antidromic and synaptic, of motoneurons, 483
——, steady potential changes during, 273
Active phase of end-plate potential, 395
Afferent projections through ventrolateral funiculi, 133
After-positivity in geniculate, 258
ALLEN, M. See ANDY, O. J., 51
Amygdaloid seizures, 51
Anal sphincter, reflex activity of, 679
ANAND, B. K., MALHOTRA, C. L., SINGH, B., and DUA, S. Cerebellar projections to limbic system, 451
ANDY, O. J., BONN, P., CHINN, R. McC., and ALLEN, M. Blood pressure alterations secondary to amygdaloid and periamygdaloid after-discharges, 51
Anterior sigmoid gyrus response, 573
Asphyxia, spinal transection and GSR, 98
Auditory cortex, effect of ablation on sound discrimination, 374
—— neurons, interaction of, 603
—— —— in CNS, 343

BAKER, F. See STARK, L., 156
Behavior changes after caudate lesions, 524
BISHOP, B. Reflex activity of external anal sphincter of cat, 679
Blood pressure changes and seizures, 51
BONN, P. See ANDY, O. J., 51
Brain, effect of prolonged stimulation of, 458
—— influence on spinal sensory paths, 321
—— lesions and optokinetic nystagmus, 297
—— stem, eye movements evoked from, 666
—— —— seizures and reticular stimulation, 633
BROOKHART, J. M. See MACHNE, X., 483

Callosal connections, organization of, 504
Cardiac ganglion, syncytial neurons of, 554
CARPENTER, M. B., FABREGA, H., and GLINSMANN, W. Physiological deficits occurring with lesions of labyrinth and fastigial nuclei, 222
Caudate lesions and behavior, 524
Cell activity in sodium-free solutions, 693
Cerebellar cortex, optically evoked potentials in, 61
—— optic potentials, 61
—— projections to limbic system, 451
Cerebral cortex, auditory neurons in, 343
—— lesions and optokinetic nystagmus, 297
—— response of anterior sigmoid gyrus, 573
—— —— in somatic area II, 16
CERF, J. A. See KOKETSU, K., 177, 693
CHINN, R. McC. See ANDY, O. J., 51
CHOW, K. L. See ORBACH, J., 195
Chronic epileptic foci, 285
Cochlear DC potential, 149
COHEN, M. I. and WANG, S. C. Respiratory neuronal activity in pons of cat, 33
Colored light, selective adaptation to, 704
Conditioned reflex activity, effect of stimulation on, 633
—— —— and conditional stimuli, 428
Cone action potential, origin of, 102
Cortical activation, slow changes during, 273
—— and reticular conditioning, 633
—— response and visual afferents, 2
—— —— evoked by geniculate stimulation, 112

DAVIS, G. D. See DEAN, W. H., 524
DEAN, W. H. and DAVIS, G. D. Behavior changes following caudate lesions in rhesus monkey, 524
DELGADO, J. M. R. Prolonged stimulation of brain in awake monkeys, 458
Discrimination of sound direction, 374
Dorsal root section, effect of, on subcortical evoked potentials, 367
DOTY, R. W. and RUTLEDGE, L. T. "Generalization" between cortically and peripherally applied stimuli eliciting conditioned reflexes, 428
DUA, S. See ANAND, B. K., 451

EASON, R. G. See HYDE, J. E., 666
ELDRED, E. See FUJIMORI, B., 165
Electrical activity of spinal ganglion cell bodies, 693
—— sign of facilitation, 624
Electroencephalogram, maturation of, 245
Electroretinogram of fresh-water turtle, 704
Endocochlear potential and stria vascularis, 149
End-plate potential, active phase of, 395
Epilepsies of temporal lobe origin, 538
EVARTS, E. V. See SCHOOLMAN, A., 112
Evoked midbrain and thalamic potentials, 367
Excitability of spinal ganglion cell bodies, 693
External anal sphincter, reflexes of, 679
Eye movements evoked from brainstem, 666

FABREGA, H. See CARPENTER, M. B., 222
FADIGA, E. See MACHNE, X., 483
Fastigial and labyrinth lesions, 222
FEX, J. See HAGBARTH, K. E., 321
FORBES, A., MILBURN, N., and FOX, S. Electroretinogram of fresh-water turtle: selective adaptation to colored light, 704
FOX, S. See FORBES, A., 704
FREEMAN, W. J. Distribution in time and space of prepyriform electrical activity, 644
FUJIMORI, B., TOKIZANE, T., and ELDRED, E. Effect on monosynaptic reflexes of decamethonium and succinylcholine. I. Peripheral mechanisms, 165

Galvanic skin reflex, effects of asphyxia on, 98
—— —— ——, post-tetanic inhibition of, 360
Ganglion cells, electrical properties of, 204
Generalization of conditional stimuli, 428
Geniculate body, after-positivity in, 258
—— stimulation, responses to, 112
GLINSMANN, W. See CARPENTER, M. B., 222
GOLDRING, S. See VANASUPA, P., 273
GRAFSTEIN, B. Organization of callosal connections in suprasylvian gyrus of cat, 504

HAGBARTH, K. E. and FEX, J. Centrifugal influences on single unit activity in spinal sensory paths, 321
HAGIWARA, S. and SAITO, N. Membrane potential change and membrane current in supramedullary nerve cells of puffer, 204
——, WATANABE, A., and SAITO, N. Potential changes in syncytial neurons of lobster cardiac ganglion, 554
HIND, J. E. See WANG, G. H., 360
HYDE, J. E. and EASON, R. G. Characteristics of ocular movements evoked by stimulation of brainstem of cat, 666
Hyper-excitable neuron, 285

Independence of hemispheres after callosum section, 78
Inhibition of galvanic skin reflex, 98, 360
Interaction of auditory neurons, 603
Intracellular potentials and strychnine, 436
Isolated somatic cortex, 78

KATSUKI, Y., WATANABE, T., and MARUYAMA, N. Activity of auditory neurons in upper levels of brain of cat, 343
——, ——, and SUGA, N. Interaction of auditory neurons in response to two sound stimuli in cat, 603
KOELLA, W. P. Some functional properties of optically evoked potentials in cerebellar cortex of cat, 61
KOKETSU, K., CERF, J. A., and NISHI, S. Effect of quaternary ammonium ions on electrical activity of spinal ganglion cells in frogs, 177
——, —— and ——. Further observations on electrical activity of frog spinal ganglion cells in sodium-free solutions, 693
KRIEGER, H. P. See PASIK, P., 297

Labyrinth and fastigial lesions, 222
Lateral geniculate body and repetitive orthodromic stimulation, 624
LENNOX, M. A. Single unit off responses to brief flashes in cat's optic tract, 88
LI, C.-L. Cortical intracellular potentials and their responses to strychnine, 436
——. Some properties of pyramidal neurones in motor cortex with particular reference to sensory stimulation, 385
Limbic system, cerebellar projections to, 451
LONG, R. G. Modification of sensory mechanisms by subcortical structures, 412

MACHNE, X., FADIGA, E., and BROOKHART, J. M. Antidromic and synaptic activation of frog motor neurons, 483
MALHOTRA, C. L. See ANAND, B. K., 451
MARUYAMA, N. See KATSUKI, Y., 343
Maturation of EEG and spreading depression, 245
Medial geniculate body, auditory neurons in, 343
Medullary responses of orbital cortex, 516
Membrane properties of puffer nerve cell, 204
METCALF, J. S. See SPIVY, D. F., 367
MILBURN, N. See FORBES, A., 704
Monosynaptic responses, effect of drugs on, 165
MOTOKAWA, K. See OIKAWA, T., 102
Motor cortex, pyramidal neurons in, 385
Muscle spindles and monosynaptic reflex, 165

NAKAHAMA, H. Cerebral response of anterior sigmoid gyrus to ipsilateral posterior sigmoid stimulation in cat, 573
——. Cerebral response in somatic area II of ipsilateral somatic I origin, 16
NELSON, J. R. Single unit activity in medullary respiratory centers of cat, 590
Neuron soma and quaternary ammonium, 177
Neuronal activity in pons, 33
Neurons, repetitive discharge of, 305
NEWMAN, P. P. and WOLSTENCROFT, J. H

Medullary responses to stimulation of orbital cortex, 516
NISHI, S. See KOKETSU, K., 177, 693

OCHS, S. Organization of visual afferents shown by spike components of cortical response, 2
Ocular movements evoked from brain stem, 666
Off responses in single optic tract fibers, 88
OGAWA, T. See OIKAWA, T., 102
OIKAWA, T., OGAWA, T., and MOTOKAWA, K. Origin of so-called cone action potential, 102
O'LEARY, J. L. See VANASUPA, P., 273
Optic potentials, 61
—— tract, responses of flashes in, 88
Optokinetic nystagmus in brain lesions, 297
ORBACH, J. and CHOW, K. L. Differential effects of resections of somatic areas I and II in monkeys, 195
Orbital cortex, medullary responses of, 516
Orbito-medullary projections, 516
Organization of visual afferents, 2
Origin of cone action potential, 102
Oscillations and stability, 156

PASIK, P., PASIK, T., and KRIEGER, H. P. Effects of cerebral lesions upon optokinetic nystagmus in monkeys, 297
PASIK, T. See PASIK, P., 297
PERL, E. R. See WHITLOCK, D. G., 133
Physiological deficits after labyrinth and fastigial lesions, 222
POBLETE, R., RUBEN, R. J., and WALKER, A. E. Propagation of after-discharge between temporal lobes, 538
Pontile respiratory neurons, 33
Post-tetanic inhibition of galvanic skin reflex, 360
Prepyriform dipole field, 644
Prolonged brain stimulation, 458
Pupil reflex to light, 156
Pyramidal neurons in motor cortex, 385

Quaternary ammonium and neuron soma, 177

Reflexes of external anal sphincter, 679
Repetitive discharge of neurons, 305
—— presynaptic activity and facilitation, 624
Resection of somatic areas I and II, effect of, 195
Respiratory neuronal activity in pons, 33
Response of frog motoneurons, 483
—— to geniculate stimulation, 112
RISS, W. Effect of bilateral temporal cortical ablation on discrimination of sound direction, 374
RUBEN, R. J. See POBLETE, R., 538
RUTLEDGE, L. T. See DOTY, R. W., 428

SAITO, N. See HAGIWARA, S., 204, 554
SCHADÉ, J. P. Maturational aspects of EEG and of spreading depression in rabbit, 245
SCHMIDT, R. P., THOMAS, L. B., and WARD, A. A., JR. The hyper-excitable neurone. Microelectrode studies of chronic epileptic foci in monkey, 285.
SCHOOLMAN, A. and EVARTS, E. V. Responses to lateral geniculate radiation stimulation in cats with implanted electrodes, 112
Seizures and blood pressure changes, 51
Selective adaptation to colored light, 704
Sensory mechanisms and subcortical structures, 412
—— stimulation, effect of, on pyramidal neurons, 385
SINGH, B. See ANAND, B. K., 451
Single unit activity in medullary respiratory centers, 590
—— —— —— in spinal sensory paths, 321
—— —— off responses in optic tract, 88
Somatic areas I and II, 195
—— cortex, 78
—— II response, 16
Somatosensory cortex and intracellular potentials, 436
Somesthetic discrimination, effect of SI and SII resection on, 195
Sound direction, discrimination of, 374
SPERRY, R. W. Preservation of high-order function in isolated somatic cortex in callosum-sectioned cat, 78
Spike components of cortical response, 2
Spinal ganglion cell bodies, excitability of, 693
—— sensory paths, brain influence on, 321
—— transection, asphyxia, and GSR, 98
SPIVY, D. F. and METCALF, J. S. Differential effect of medial and lateral dorsal root sections upon subcortical evoked potentials, 367
Spreading depression, maturation of, 245
SPYROPOULOS, C. S. See TASAKI, I., 149
Stability and oscillations, 156
STARK, L. and BAKER, F. Stability and oscillations in a neurological servomechanism, 156
Stria vascularis and endocochlear potential, 149
Strychnine and intracellular potentials, 436
Subcortical evoked potentials, effect of dorsal root section on, 367
—— sensory mechanisms, 412
SUGA, N. See KATSUKI, Y., 603

Supramedullary nerve cell, membrane properties of, 204
Suprasylvian gyrus, callosal connections in, 504
Syncytial neurons of cardiac ganglion, 554

TAKEUCHI, A. and TAKEUCHI, N. Active phase of frog's end-plate potential, 395
TAKEUCHI, N. See TAKEUCHI, A., 395
TASAKI, I. and SPYROPOULOS, C. S. Stria vascularis as source of endocochlear potential, 149
Temporal lobe after-discharge, 538
THOMAS, L. B. See SCHMIDT, R. P., 285
TOKIZANE, T. See FUJIMORI, B., 165
Transcallosal response in suprasylvian gyrus, 504

Units in medullary respiratory centers, 590

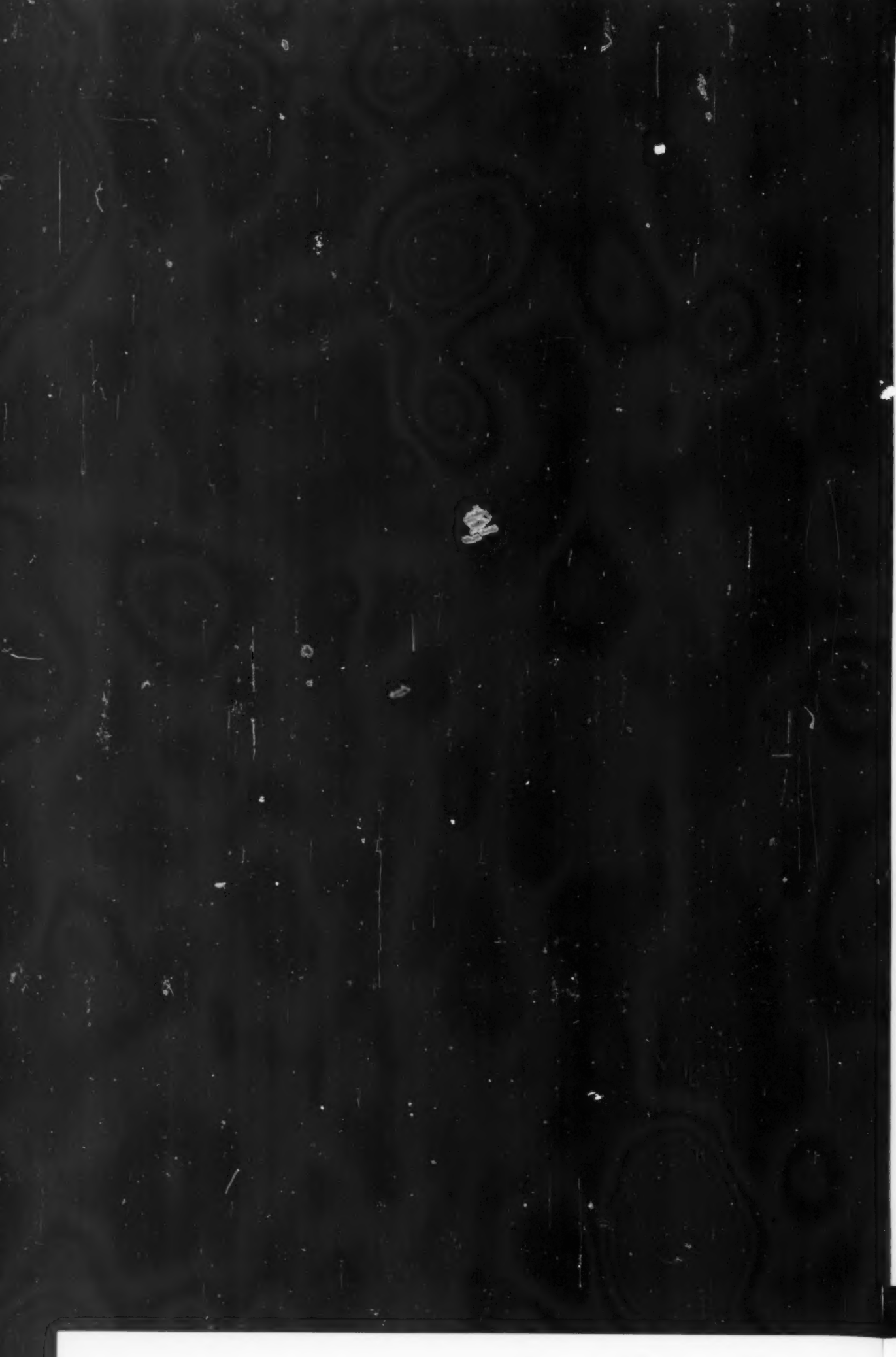
VANASUPA, P., GOLDRING, S., O'LEARY, J. L., and WINTER, D. Steady potential changes during cortical activition, 273
VASTOLA, E. F. After-positivity in lateral geniculate body, 258
——. An electrical sign of facilitation accompanying repetitive presynaptic activity, 624
Ventrolateral funicular projections, 133
Visual afferents and cortical response, 2

WALKER, A. E. See POBLETE, R., 538
Wall, P. D. Repetitive discharges of neurons, 305
WANG, G. H. Effects of asphyxia on galvanic skin reflex before and after spinal transection, 98
—— and HIND, J. E. Supraspinal origin of a poststimulatory long-lasting inhibition of galvanic skin reflex, 360
WANG, S. C. See COHEN, M. I., 33
WARD, A. A., JR. See SCHMIDT, R. P., 285
WATANABE, A. See HAGIWARA, S., 554
WATANABE, T. See KATSUKI, Y., 343, 603
WHITLOCK, D. G. and PERL, E. R. Afferent projections through ventrolateral funiculi to thalamus of cat, 133
WINTER, D. See VANASUPA, P., 273
WOLSTENCROFT, J. H. See NEWMAN, P. P., 516

ZUCKERMANN, E. Effect of cortical and reticular stimulation on conditioned reflex activity, 633

REVIEWS

BURR, H. S. *Evolution of nervous control from primitive organisms to man*, ed. by A. D. Bass, 717
BUXTON, C. L. *Neurological and psychological deficits of asphyxia neonatorum*, ed. by W. W. Windle, 477
LORD COHEN OF BIRKENHEAD. *Speech and brain-mechanisms*, by W. Penfield and R. Lamar, 717
DENNY-BROWN, D. *The innervation of muscle*, by C. Coërs and A. L. Woolf, 720
F[ULTON], J. F. *Mental symptoms in temporal lobe epilepsy and temporal lobe gliomas with special references to laterality of lesion and the relationship between handedness and brainedness*, by T. Bingley, 238
——. *Young endeavour. Contributions to science by medical students of the past four centuries*, by W. C. Gibson, 478.
GALAMBOS, R. *The waking brain*, by H. W. Magoun, 238
LARSELL, O. "Das Kleinhirn," by J. Jansen and A. Brodal, 130
MACLEAN, P. D. *Consciousness and the chemical environment of the brain*, Report of the Twenty-fifth Ross Pediatric Research Conference, 242
MATHIESON, G. *Anastomoses between the leptomeningeal arteries of the brain*, by H. M. Vander Eecken, 601
MOLDAVER, J. *Physiologie du système nerveux central*, 3rd ed., by G. Morin, 601
RICHARDSON, E. P., JR. and ROMANUL, F. C. A. *Atlas privind aspecte morfologice ale terminatiilor nervoasc viscerale. Contributii la studiul problemei interoceptorilor*, by I. Niculescu, 240
—— and ——. *Morfopatologia sistemului nervos*, by I. T. Niculescu, 239
RIESCO-MAC-CLURE, J. S. *Vertiges et surdités d'origine vasculaire*, by A. Maurice, 600
ROMANUL, F. C. A. See RICHARDSON, E. P., JR., 239, 240
SCHWAB, R. S. *Pathogenesis and treatment of Parkinsonism*, ed. by W. S. Fields, 478
VAN HEUVEN, J. A. *Franciscus Cornelis Donders*, by F. P. Fischer and G. ten Doesschate, 715
WALKER, A. E. *Biological and biochemical bases of behavior*, ed. by H. F. Harlow and C. N. Woolsey, 241
——. *The effect of advancing age upon the human spinal cord*, by L. R. Morrison, 341
——. *Neurophysiology and neurochemistry of convulsion*, by T. Hayashi, 715
——. *A textbook of neurology*, 2nd ed., by H. H. Merritt, 480
WALL, P. D. *The physical foundations of biology*, by W. Elsasser, 339
WANG, G. H. *An introduction to Benesh dance notation*, by R. and J. Benesh, 130
WARD, A. A., JR. *Temporal lobe epilepsy*, by M. Baldwin and P. Bailey, 340



JOURNAL OF NEUROPHYSIOLOGY

JOURNAL OF NEUROPHYSIOLOGY

[*J. Neurophysiol.*]

VOLUME TWENTY TWO

1959

CHARLES C THOMAS
SPRINGFIELD, ILLINOIS, U.S.A.

EDITORIAL BOARD

JOHN F. FULTON

FRANK BRINK
ROBERT GALAMBOS
RAGNAR GRANIT
PAUL D. MACLEAN
VERNON B. MOUNTCASTLE
JAMES L. O'LEARY
THEODORE C. RUCH
CLINTON N. WOOLSEY

Assistant Editor, MARY P. WHEELER

ADVISORY EDITORS

LORD ADRIAN (Cambridge)
PERCIVAL BAILEY (Chicago)
PHILIP BARD (Baltimore)
G. H. BISHOP (St. Louis)
F. BREMER (Brussels)
DETLEV W. BRONK (New York)
FRITZ BUCHTHAL (Copenhagen)
HSIANG-TUNG CHANG (Shanghai)
STANLEY COBB (Boston)
HALLOWELL DAVIS (St. Louis)
U. EBBECKE (Bonn)
SIR JOHN ECCLES (Canberra)
JOSEPH ERLANGER (St. Louis)
WALLACE O. FENN (Rochester, N. Y.)
A. FESSARD (Paris)
ALEXANDER FORBES (Boston)
H. S. GASSER (New York)
W. R. HESS (Zürich)
MARION HINES (Atlanta)
DAVENPORT HOOKER (New Haven)
YASUJI KATSUKI (Tokyo)
ARISTIDES A. P. LEÃO (Rio de Janeiro)
ROBERT B. LIVINGSTON (Bethesda)
DAVID P. C. LLOYD (New York)
GIUSEPPE MORUZZI (Pisa)
WILDER PENFIELD (Montreal)
H. PIÉRON (Paris)

TABLE OF CONTENTS

NO. 1, JANUARY 1959

Announcements 1

Organization of visual afferents shown by spike components of cortical response. SIDNEY OCHS 2

Cerebral response in somatic area II of ipsilateral somatic I origin. HIROSHI NAKAHAMA 16

Respiratory neuronal activity in pons of cat. MORTON I. COHEN AND S. C. WANG 33

Blood pressure alterations secondary to amygdaloid and periamygdaloid after-discharges. O. J. ANDY, P. BONN, R. McC. CHINN, AND M. ALLEN 51

Some functional properties of optically evoked potentials in cerebellar cortex of cat. WERNER P. KOELLA 61

Preservation of high-order function in isolated somatic cortex in callosum-sectioned cat. R. W. SPERRY 78

Single unit off responses to brief flashes in cat's optic tract. MARGARET A. LENNOX 88

Effects of asphyxia on galvanic skin reflex before and after spinal transection. G. H. WANG 98

Origin of so-called cone action potential. T. OIKAWA, T. OGAWA, AND K. MOTOKAWA 102

Responses to lateral geniculate radiation stimulation in cats with implanted electrodes. ARNOLD SCHOOLMAN AND EDWARD V. EVARTS 112

Reviews 130

Manuscripts accepted 131

NO. 2, MARCH 1959

Afferent projections through ventrolateral funiculi to thalamus of cat. DAVID G. WHITLOCK AND EDWARD R. PERL 133

Stria vascularis as source of endocochlear potential. I. TASAKI AND C. S. SPYROPOULOS 149

Stability and oscillations in a neurological servomechanism. LAWRENCE STARK AND FRANK BAKER 156

Effect upon monosynaptic reflexes of decamethonium and succinylcholine. I. Peripheral mechanisms. BUNICHI FUJIMORI, TOSHIHIKO TOKIZANE, AND EARL ELDRED 165

Effect of quaternary ammonium ions on electrical activity of spinal ganglion cells in frogs. K. KOKETSU, J. A. CERF, AND S. NISHI 177

Differential effects of resections of somatic areas I and II in monkeys. J. ORBACH AND KAO LIANG CHOW 195

Membrane potential change and membrane current in supramedullary nerve cell of puffer. SUSUMU HAGIWARA AND NOZOMU SAITO 204

Physiological deficits occurring with lesions of labyrinth and fastigial nuclei. MALCOLM B. CARPENTER, HORACIO FABREGA, AND WALTER GLINSMANN 222

Necrology 235

Notices 236

Reviews 238

Manuscripts accepted for publication 243

NO. 3, MAY 1959

Maturational aspects of EEG and of spreading depression in rabbit. J. P. SCHADÉ . . 245

After-positivity in lateral geniculate body. E. F. VASTOLA 258

Steady potential changes during cortical activation. PRABHUNDHA VANASUPA, SIDNEY GOLDRING, JAMES L. O'LEARY AND DAVID WINTER 273

The hyper-excitable neurone. Microelectrode studies of chronic epileptic foci in monkey. RICHARD P. SCHMIDT, LOUIS B. THOMAS, AND ARTHUR A. WARD, JR. 285

Effects of cerebral lesions upon optokinetic nystagmus in monkeys. PEDRO PASIK, TAUBA PASIK, AND HOWARD P. KRIEGER 297

Repetitive discharge of neurons. PATRICK D. WALL 305

Centrifugal influences on single unit activity in spinal sensory paths. K. E. HAGBARTH AND J. FEX 321

Notice 339

Reviews 339

Manuscripts accepted for publication 342

NO. 4, JULY 1959

Activity of auditory neurons in upper levels of brain of cat. YASUJI KATSUKI, TAKESHI WATANABE, AND NAOSHIGE MARUYAMA 343

Supraspinal origin of a post-stimulatory long-lasting inhibition of galvanic skin reflex. G. H. WANG AND JOSEPH E. HIND 360

Differential effect of medial and lateral dorsal root sections upon subcortical evoked potentials. DIXON F. SPIVY AND JOHN S. METCALF 367

Effect of bilateral temporal cortical ablation on discrimination of sound direction. WALTER RISS 374

Some properties of pyramidal neurones in motor cortex with particular reference to sensory stimulation. CHOH-LUH LI 385

Active phase of frog's end-plate potential. AKIRA TAKEUCHI AND NORIKO TAKEUCHI 395

Modification of sensory mechanisms by subcortical structures. R. GORDON LONG 412

"Generalization" between cortically and peripherally applied stimuli eliciting conditioned reflexes. ROBERT W. DOTY AND LESTER T. RUTLEDGE 428

Cortical intracellular potentials and their responses to strychnine. CHOH-LUH LI . . 436

Cerebellar projections to limbic system. B. K. ANAND, C. L. MALHOTRA, BALDEV SINGH, AND S. DUA 451

Prolonged stimulation of brain in awake monkeys. JOSÉ M. R. DELGADO 458

Notices 476

Reviews 477

Necrology—Correction 481

Manuscripts accepted for publication 482

NO. 5, SEPTEMBER 1959

Antidromic and synaptic activation of frog motor neurons. XENIA MACHNE, ETTORE FADIGA, AND JOHN M. BROOKHART 483

Organization of callosal connections in suprasylvian gyrus of cat. BERNICE GRAFSTEIN 504

Medullary responses to stimulation of orbital cortex. P. P. NEWMAN AND J. H. WOLSTENCROFT 516

Behavior changes following caudate lesions in rhesus monkey. WAID H. DEAN AND GEORGE D. DAVIS 524

Propagation of after-discharge between temporal lobes. REINALDO POBLETE, ROBERT J. RUBEN, AND A. EARL WALKER 538

Potential changes in syncytial neurons of lobster cardiac ganglion. SUSUMU HAGIWARA, AKIRA WATANABE, AND NOZOMU SAITO 554

Cerebral response of anterior sigmoid gyrus to ipsilateral posterior sigmoid stimulation in cat. HIROSHI NAKAHAMA 573

Single unit activity in medullary respiratory centers of cat. JAMES R. NELSON 590

Notices 599

Reviews 600

Manuscripts accepted for publication 602

NO. 6, NOVEMBER 1959

Interaction of auditory neurons in response to two sound stimuli in cat. YASUJI KATSUKI, TAKESHI WATANABE, AND NOBUO SUGA 603

An electrical sign of facilitation accompanying repetitive presynaptic activity. E. F. VASTOLA 624

Effect of cortical and reticular stimulation on conditioned reflex activity. EMIL ZUCKERMANN 633

Distribution in time and space of prepyriform electrical activity. WALTER J. FREEMAN 644

Characteristics of ocular movements evoked by stimulation of brainstem of cat. JANE E. HYDE AND ROBERT G. EASON 666

Reflex activity of external anal sphincter of cat. BEVERLY BISHOP 679

Further observations on electrical activity of frog spinal ganglion cells in sodium-free solutions. K. KOKETSU, J. A. CERF, AND S. NISHI 693

Electroretinogram of fresh-water turtle: selective adaptation to colored light. ALEXANDER FORBES, NANCY MILBURN, AND SALLY FOX 704

Notices 714

Reviews 715

Manuscripts accepted for publication 722

Index 723